

Finally, in the neighborhood of Frankfort, to a distance of perhaps 100 kilometers, stations will be located, whence warnings will be sent to the weather service station at this place of the approach of thunderstorms and squalls and, after they have past, reports by telegraph of the time and direction of path. By means of such despatches the time when such storms will reach Frankfort can be calculated with tolerable accuracy. Signal stations will be located at conspicuous points, from which storm warnings can be sent to balloons and other aircraft by means of optical signals; possibly also by wireless telegraphy.

Doctor Linke does not exaggerate the importance of this project when he says:

The wider object of this organization is, of course, the acquisition of knowledge and experience for the coming era of aerial navigation; the consummation of which, on account of the uncertainty of atmospheric conditions, is impossible without the previous improvement and extension of the weather service. That such an undertaking will at the same time increase our knowledge of atmospheric processes and thereby improve the accuracy of the forecasts, is evident. *Aeronautics and meteorology support each other, neither can dispense with the other.*

It is perhaps not too much to say that the execution of this project will mark the beginning of a new era in practical meteorology—an era in which, ultimately, all the weather services of the world will be called upon to extend the benefits of their forecasts and warnings to the navigators of the air. The development of aeronautics means the enhancement of the importance of meteorology among the sciences and in the domain of practical affairs. The rapid progress that this art has made within the last few years must, therefore, be a source of gratification and encouragement to all meteorologists.

#### THE ARGENTINE METEOROLOGICAL STATION IN THE SOUTH ORKNEYS.

The corvette *Uruguay*, of the Argentine Navy, left Buenos Ayres on January 14 for the meteorological and magnetical station at the South Orkneys. The relief party sent out by the Argentine Meteorological Office consists of four members, under the command of Mr. A. Lindsay, of Edinburgh, who received his early meteorological training at the Ben Nevis Observatory, and who for the past year has been in charge of the new meteorological observatory established at Port Madryn, in the territory of Chubut [Argentina]. The observations at the South Orkneys this year are likely to prove of unusual interest and importance owing to the comparative proximity of the Charcot expedition, which is to winter in the vicinity of Alexander Land. On the return voyage of the *Uruguay* a stop is to be made at Moltke Haven, South Georgia, in order to make magnetic observations in the same spot as that previously occupied by the German International Expedition of 1882-83. This work is intrusted to Mr. W. R. Bruce, chief last year at the South Orkney station, who, along with the rest of the party, returns with the *Uruguay*. The data from South Georgia will be of great value in connection with the elaborate magnetic survey of the Argentine Republic and adjacent regions which has been in progress for some years.—*Scottish Geographical Magazine*, March, 1909, p. 151.

#### AN INVERTED RAINBOW.

On April 9, 1908, an inverted rainbow was seen from the Italian geodynamic observatory of Rocca de Papa, by Professor Agamennone, the director of the observatory, and a party of visitors. The morning was showery; and when the visitors reached the observatory, 2,500 feet above sea level, and looked down on the vast Campagna, they were astonished to see projected on the vineyards and trees beneath a perfect rainbow, with its convex side down and its middle point bearing northeast. Inverted rainbows are very rare even in mountainous regions. None of the visitors, who were French and Italian meteorologists, had ever seen one, nor had Professor Agamennone, altho he had been director of the observatory for eight years. The phenomenon, however, is not unknown. It was observed from the Eiffel Tower, in Paris, in April, 1891.

In this case there was a double rainbow, extending above and below the horizon to form two nearly complete concentric circles.—*Scientific American*, March 20, 1909, p. 219.

#### PRIZE OFFERED BY THE SCOTTISH METEOROLOGICAL SOCIETY.

The Scottish Meteorological Society offers, thru its council, a prize of £20 for the best essay on a meteorological subject. As an indication of the kind of essay the council are prepared to consider, the following subject may be mentioned:—

"A discussion of the extent to which the heat set free when water vapor is converted into the liquid state influences the temperature of the atmosphere, with special reference to the climatology of different parts of Scotland."

The council, however, wish it to be clearly understood that an essay on any subject will be equally eligible.

The following are the conditions on which the prize is offered:—

1. The competition shall be open to regular matriculated students of the four Scottish universities, including University College, Dundee, who have attended classes of mathematics and natural philosophy, or to graduates of the Scottish universities who at 1st January, 1910, shall be of not more than five years' standing.

2. The essays must be lodged with the secretary to the Scottish Meteorological Society, 122 George street, Edinburgh, on or before 31st March, 1910, with a statement of the candidate's qualifications to compete.

3. All essays must be legibly written, or typewritten, on one side of the paper only.

4. The council of the Society shall appoint a referee or referees to report on the essays, and the decision of the council as intimated by the secretary shall be final.

5. The council reserve the right to publish the successful essay in the Society's Journal. The other essays will be returned to the competitors.

R. T. OMOND,  
E. M. WEDDERBURN,  
Joint Honorary Secretaries.

#### DR. SERENO BISHOP.

We regret to learn of the recent serious illness and death, January, 1909, of Dr. Sereno E. Bishop at Honolulu, H. I. For more than a year Doctor Bishop had been partially paralyzed, altho his general bodily health has been good. Almost the last of his intelligent activities were his observations of the skies at the end of 1908, when he noted the haze, Bishop's ring, and some sky-glows too brilliant for the average atmosphere.—*C. A.*

#### SUMMARY OF ICE CONDITIONS OF THE GREAT LAKES.

By NORMAN B. CONGER, Marine Agent. Dated Detroit, Mich., March 2, 1909.

The reports from the regular and display stations of the U. S. Weather Bureau indicate that there is much less ice in all the lakes than was reported last season. In Lake Superior, the western end is covered with a field extending out about 20 miles; small fields are reported over the central and eastern portions. The ice in Whitefish Bay is solid. Solid ice is reported the entire length of St. Marys River. In Green Bay the ice averages from 10 to 22 inches and is solid. In Lake Michigan the fields are small and much broken up. There are not as many fields reported over the northern portion. At the Straits of Mackinac the ice is heavily windrowed in places, and where smooth is about 20 inches in thickness. In Lake Huron the fields are reported to the north and east of Thunder Bay Island. The ice is not heavy. No fields are reported over the southern portion. Lake St. Clair is reported covered with about 7 inches of ice, with probably some open